

REMARKS

Please reconsider the present application in view of the above amendments and following remarks. Claims 1-6, 8-11, 14, 15, 17-20, and 23-26 are currently pending. By way of this Amendment and Response, claims 1, 5, 6, 8, 9, 14, 15, 17, 18, 24, and 26 have been amended, and no claim has been added or canceled. Claims 1-6, 8-11, 14, 15, 17-20, and 23-26 are pending upon entry of this amendment. Applicants thank the Examiner for carefully considering the present application.

Response to Rejection Under 35 USC § 102 and 103

In paragraph 2 of the Office Action, the Examiner rejected claims 1-3, 5, 8, 9, 11, 14, 17, 18, 20, and 23-26 under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent Application Publication Serial No. 2003/0101355 to Mattsson (“Mattsson”) in view of U.S. Patent Application Publication Serial No. 2003/0167229 to Ludwig, et al. (“Ludwig”). In paragraph 3 of the Office Action, the Examiner rejected claims 4, 10, and 19 under 35 U.S.C. 103(a) as allegedly being unpatentable over Mattsson in view of Ludwig and further in view of an article titled “DIDAFIT: Detecting Intrusions in Databases through Fingerprinting Transactions” by Low, et al. (“Low”). In paragraph 4 of the Office Action, the Examiner rejected claims 6 and 15 under 35 U.S.C. 103(a) as allegedly being unpatentable over Mattsson in view of Ludwig and further in view of U.S. Patent Application Publication Serial No. 2005/0097149 to Vaitzblit, et al. (“Vaitzblit”). This discussion combines these rejections in order to simplify the issues.

Independent claim 1 has been amended to now recite the following:

Apparatus for empirically adjusting a user’s authorized access to a database, said apparatus comprising:

coupled to the database, a database discovery module configured to determine database structure and the user's authorized access to the database, the user's authorized access including a set of authorized database tables and authorized columns;

coupled to the database, a command monitoring module configured to monitor the user's actual accesses to the database until a preselected quantity of actual accesses have been observed, the user's actual accesses including a set of accessed database tables and accessed columns; and

coupled to the database discovery module and to the command monitoring module, an analysis module configured to compare the user's actual accesses with the user's authorized access and configured to **adjust the user's authorized access taking into account results of the comparing by changing settings within a database access control module to deny the user future database access to an authorized database table or an authorized column that is not in the set of accessed database tables and accessed columns.**

(emphasis added)

Thus, independent claim 1 beneficially recites an apparatus for empirically adjusting a user's authorized access. The apparatus compares the user's authorized access with the user's actual accesses, and adjusts the user's authorized access to selectively deny the user future database access to certain database tables or columns, those that the user was authorized to access but did not access. This technique is useful in restricting loosely granted database access to reduce the possibility of database intrusion. Independent claims 5 and 14 recite similar limitations.

The cited references, Mattsson, Ludwig, Low, and Vaitzblit, either alone or in combination, fail to disclose the claimed invention. Mattsson discloses a database intrusion detection system that uses item access rates and inference patterns to detect intrusions. If a user query activity is within his permitted item access rate, yet his accumulated query results match a relevant inference pattern, then the Mattsson system classifies the related query activity as an intrusion. See Mattsson, paragraph [0044].

Mattsson does not teach adjusting “authorized access” as claimed. The examiner cited paragraphs [0037-39], [0042-46], and [0052] for teaching of corresponding limitations before the present amendment. These paragraphs disclose that the Mattsson system has an intrusion detection module that compares query results with item access rates and inference patterns to detect intrusions, and that if an intrusion is detected then an access control system is alerted and the query results are not transmitted to the requesters. Nowhere in Mattsson does it teach or suggest selectively denying a user’s future database access to certain database tables or columns, those that he was authorized to access but did not access.

Ludwig similarly fails to teach the above-cited claim features. Ludwig discloses a business platform for payment transactions and is not related to adjusting user access to databases. The Examiner cited paragraph [0051] of Ludwig for teaching “denying future database access to operations by certain users on database tables and columns that were previously authorized but not observed by the command monitoring module” as previously recited in claim 1. Paragraph [0051] discloses methods to verify the identity of a user, including periodically changing passwords and expiring inactive user accounts. None of these involves selectively denying a user’s future database access to certain database tables or columns, those that he was authorized to access but did not access.

Low and Vaitzblit also fail to disclose the above-cited claim features. Low discloses a database intrusion detection system that fingerprints SQL statements in order to detect illegitimate accesses. Vaitzblit discloses a database audit system used to monitor, and optionally alert on database activity. Neither of the two references teaches or suggests selectively denying a user’s future database access to certain database tables or columns in the manner claimed.

In view of the above, Mattsson, Ludwig, Low, and Vaitzblit, whether considered individually or in combination, fail to disclose each and every limitation recited in independent claims 1, 5, and 14. Thus, independent claims 1, 5, and 14 are patentable over Mattsson, Ludwig, Low, and Vaitzblit. Dependent claims are allowable for at least the same reasons. Accordingly, withdrawal of the § 103 rejections is respectfully requested.

Summary

In sum, Applicants respectfully submit that claims 1-6, 8-11, 14, 15, 17-20, and 23-26, as presented herein, are patentably distinguishable over the cited references. Therefore, Applicants request reconsideration of the basis for the rejections to these claims and request allowance of them.

Should the Examiner wish to discuss the above amendments or if the Examiner believes that for any reason direct contact with Applicants' representative would help to advance the prosecution of this case to finality, the Examiner is invited to telephone the undersigned at the number given below.

Respectfully Submitted,
HARLAN SEYMOUR ET AL.

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Jie Zhang, Reg. No.: 60,242
FENWICK & WEST LLP
801 California Street
Mountain View, CA 94041
Phone: (650) 335-7297
Fax: (650) 938-5200